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THE PLANT DISEASE REPORTER

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THE PLANT DISEASE REPORTER

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THE OFFICE OF MYCOLOGY AND DISEASE SURVEY

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PHOMA MALI SCHULZ. & SACC. AS THE CAUSE OF APPLE CANKER IN THE PACIFIC NORTHWEST

S. M. Zeller

So far as the writer can learn, the canker of apple caused by Phoma mali Schulz. & Sacc. has not been reported in America west of New England (1). During July 1925, Mr. A. R. Kirk, a district fruit inspector, Washington State Department of Agriculture, sent in some apple cankers from Dayton, Columbia County, Washington. These cankers were on two and three-year-old trees in two orchards about four miles apart. In some trees the infections were so numerous as to produce very severe injury. Some branches had nearly every spur and bud killed on one- to three-year-old wood.

The fungus associated with 20 cankers examined proved to be a Phoma which could not be distinguished from Phoma mali as described by Lewis. The fungus grew well on potato hard agar. Isolations made on July 18 were found to exhibit pycnidia on August 7. The pycnospores were ellipsoid, hyaline and 5-7.5 microns long by 2-2.5 microns in diameter. These are the same measurements of the spores from pycnidia on the cankers.

On September 8, 1925, five inoculations were made on two- and three-year-old wood of apple trees and when gathered on May 7, 1926, these had all developed small cankers which were similar in every way to those from which the fungus had been isolated.

There is no evidence that this canker has a wide distribution in the West Coast States but its occurrence here perhaps merits this short note.

1. Lewis, C. E. Apple diseases caused by Coryneum foliicolum Fckl. and Phoma mali Schulz. & Sacc. Maine Agr. Exp. Sta. Bul. 170: 185-200. 1909.

DISEASES OF RICE IN ARKANSAS

V. H. Young has recently sent in reports on the occurrence of rice diseases in Arkansas (Oct. 1).

Stem rot (Sclerotium oryzae) causing severe loss by lodging and faulty kernel development in a number of cases. Seems to be increasing considerably.

Rotten neck (Piricularia oryzae) Very common but causing slight loss. Probably a little more than last year.

Leaf and glume spotting (undet.) and blotching rather common, but apparently causing little damage. Possibly associated with Helminthosporium and Alternaria.

Straighthead (probably improper soil aeration) was not very common, but causing much loss in a few cases. Not always associated with new land.

REPORTS OF CORN SMUT (USTILAGO ZEAE)

New York: Occasionally reported; damage slight. (Barrus, Oct. 1)

Pennsylvania: Due to excessive wet weather after the middle of July, corn smut has been more destructive than usual. As high as 5 to 6 per cent of the ears in some fields have been destroyed. This does not include an additional 5 to 10 per cent of stalk and tassel infection. (Kirby, Oct. 11)

Arkansas: More corn smut noticed this year, on late maturing varieties, than in eight years previously. On the other hand, early maturing varieties of field corn and most of the sweet corn, showed a relatively small percentage of infection. (Rosen, Oct. 1)

North Dakota: More severe than usual in the Red River Valley this year. (Brentzel, Oct. 1)

Kansas: Less than usual. It is believed the excessive drought in many places in Kansas reduced the vegetative growth of the corn to an extent which prevented considerable infection. The loss from smut in Kansas will not be over 3 per cent. (Melchers, Sept. 25)

NON-PARASITIC APPLE DISEASES IN NEW YORK

Under date of October 6, A. B. Burrell sent in the following reports on non-parasitic apple diseases in New York.

Cork. The only part of New York State where cork occurs is the Champlain Valley. It affects chiefly the varieties Fameuse and McIntosh and in these susceptible varieties the 1926 loss amounted to about one per cent of the crop. During this season the writer has observed cork only in a few orchards south of Plattsburgh. The most severe loss noted in any one orchard was 15 per cent of the crop in a 10-acre block. A majority of the trees whose apples were badly affected last year, are now carrying a good crop of sound fruit.

Drouth spot. This disease has been found during the current season in numerous orchards along the west coast of Lake Champlain as far north as Chazy and as far south as Crown Point, a distance of about 70 miles. The fruit on a single tree in the lower Hudson Valley showed the characteristic symptoms, and there were about a dozen trees carrying drouth spot fruit in one orchard at Orwell, Vermont. The loss in Clinton County, N. Y. this year was 5 per cent of the commercial crop or about one-half as great as the 1925 loss. Drouth spot ruined 30 per cent of the crop in one 90-acre orchard this year. McIntosh is by far the most susceptible variety, and Spy is second.

Drouth die-back. The Champlain Valley section is the only part of New York where drouth die-back is known to occur. The first symptom of drouth die-back is usually a ripening of the leaves on the terminal twigs in midsummer, accompanied by a brown discoloration in the cambial region of the twigs. There was a striking scarcity of these primary symptoms in 1926, in contrast to their great prevalence in 1925. McIntosh, Fameuse, and Spy, in the order named, are the most susceptible varieties. Cork, drouth spot, and drouth die-back may be symptoms produced by a common cause.

MYCELIAL NECKROT OF ONION IN THE WISCONSIN-CHICAGO DISTRICTS

"I note in the recent number of the Plant Disease Reporter the report of neck rot of onion from Wisconsin. You should probably be advised that the damage in Wisconsin and in the Chicago districts is due primarily to Botrytis byssoidea. So far this season we have not run across B. allii. The disease is very severe this season in both sections upon white onion sets. The injury will run from 10 to 80 per cent. As usual the red and yellow varieties are comparatively free. Artificial drying of white sets is being used this year for the first time on a commercial scale by two Illinois companies." (J.C.Walker, Oct. 12)

ONION DISEASES IN NEW YORK

The following reports on onion diseases in New York are by J. G. Gaines (September 15).

Neckrot (Botrytis allii) not serious in any field observed, although present in July and August on the majority of farms. Losses estimated to be between 2 and 5 per cent.

Smudge (Colletotrichum circinans) present during July and August. Present universally on white onions which appeared as varietal mixtures in fields of Yellow Globe onions. Since few white onions were grown no losses were incurred.

Brittle (Fusarium sp.). Traces present in isolated fields in western New York. Observed during June and July. Losses negligible.

Pink root (Fusarium sp.) caused practically a total loss in set onions where the seedlings were grown in pink root infested soil. Set onions grown from healthy seedlings were only slightly affected. Slight losses occurred in seed onions in all sections visited. Average loss estimated 5 per cent.

Bulb rot (Fusarium cepae) present in a few fields in western New York during July and August. Caused no losses.

Macrosporium rot (Macrosporium parasiticum) present in all fields during August. In many fields it was present July 1 following wind or other injury. It became most prevalent after the tops had been mildewed by Peronospora. Primarily a secondary parasite. Actual losses - negligible.

Downy mildew (Peronospora schleideni) present in Wayne County July 17 to September 15. Present in Elba during approximately the same period. Did not appear at Canastota until after August 1. Was most prevalent during the first two weeks in August, when practically every field was affected. Caused losses varying from 5 to 40 per cent - average 15 per cent. Set onions matured early and were not affected.

Smut (Urocystis cepulae) present to a slight extent in all sections, although many fields were entirely free from the disease. In smut infested districts considerable losses were incurred where control measures were not attempted. Loss due to smut - 5 per cent.

ADDITIONAL REPORTS OF POTATO LATE BLIGHT (PHYTOPHTHORA INFESTANS)

Numerous reports concerning late blight rot have been received recently, especially from Pennsylvania, Ohio and western Maryland sections, as well as from Wisconsin. The situation in those states is indicated in the following reports. Collaborators and others who have information concerning the prevalence of late blight rot are requested to keep the Plant Disease Survey informed.

Maine: In untreated control plots in northeastern Maine, 100 per cent of the plants were affected but the yield was reduced less than 10 per cent and there was only about one per cent rot. (Folsom, Oct. 15)

New York: About one-tenth of the late potato crop in the state will be left in the field because of late blight rot. In addition to this another tenth of the crop never grew because the vines were killed by late blight. Probably at least a twentieth of the crop will rot in the grower's cellar, in the car or in the hands of the dealer. (Fernow, Nov. 1)

Pennsylvania: Concerning late blight of potatoes in Pennsylvania, the first specimen was found on August 18 in Lehigh County. (This is in the section east of the Blue Ridge.) Inside of two weeks all unsprayed fields were almost completely dead throughout this region. The outbreak occurred simultaneously throughout the mountain portions, occurring about ten days later than the eastern outbreak. The extreme southwestern and southeastern portions of the state are the only areas escaping.

Rot is the most severe on record in the state, amounting to from 25 to 150 bushels per acre. The properly sprayed fields have escaped both foliage and tuber infection, and yields of over 500 bushels per acre are being recorded, with 125 bushels per acre increase and over, due to spraying. Dusting is failing as usual. (E. L. Nixon, Oct. 20)

Maryland: Late blight was very severe in unsprayed potato fields in Garrett County this year. On account of the rainy weather which has been prevalent during the past month potatoes could be dug only with great difficulty. Those which have been dug had to be removed from wet soil and most of them are covered with mud. Over 50 per cent of the crop is still in the ground. The ground was covered with snow when I made the inspection and I could not examine any potatoes in the fields, but some growers report that 50 to 75 per cent of the potatoes remaining in the ground are rotting. (Jehle, Oct. 27)

Virginia: I have received no reports of the occurrence of late blight of potatoes from Virginia.

The early crop of potatoes, grown in the western section where late blight is apt to occur, escaped with no infection, as they matured during the spell of dry weather. It is possible, however, that some potatoes which have been very late in maturing may have been infected, as we have had weather favorable to late blight development recently. (Fromme, Oct. 26)

West Virginia: In our pathological garden here at Morgantown the disease appeared about October 1 on late potatoes. Due to the fact, however, that these potatoes were almost dead from hopperburn the blight could cause no further damage. Neither was there any tuber rot observed.

In a few other sections of the state late blight was observed towards the close of the season, but conditions were very similar to the foregoing. Hopperburn was unusually severe and late potatoes died very early in the season. If the life of the potato vines had not been shortened so materially by hopperburn there is no question but that considerable damage to the late crop would have resulted from the late blight. (Sherwood, Oct. 27)

Michigan: Reported from Van Buren County by H. C. Moore. Considerable leaf infection but no tuber rot. It also occurred in Schoolcroft County but damage from it was prevented by killing frost September 26. (Kotila, Oct. 15)

Wisconsin: Reports coming from all over the state. Losses will be more than for several years. Extreme wet weather in August and September made spraying impossible. Blight rot accompanied by wet bacterial rot in low ground. Most dealers are refusing to accept potatoes for storage when hauled direct from field. Potatoes stored green are a total loss. Impossible to make definite statement now but total loss will probably be over 15 per cent of crop. (Vaughan, Oct. 21)

POTATO DISEASES IN NEW YORK

Besides the report on late blight, quoted above, M. F. Barrus has sent in the following notes on potato diseases in New York (September 1).

Early blight (Alternaria solani) observed in a few places. One large field in Wyoming County has nearly all vines much spotted, and the dying of vines is probably due to it. Very little observed in most places.

Leaf roll (virus) has occurred to about the same extent as last year. A larger percentage of affected plants occurs in fields of western New York, particularly in the northwestern section and in the counties along the Lake Ontario. Blue sprout varieties are grown there most largely although the disease occurs on other varieties as well.

Mosaic (virus) appeared to be somewhat masked in July so that it was impossible to determine the amount of infection. Later observations indicate it to be as abundant as last year. It appears to be especially prevalent in Green Mountain fields of northeastern part of state.

Spindle tuber (virus) not particularly troublesome. Probably less than 2 per cent of affected plants in state, possibly less than one per cent.

Yellow dwarf (possibly virus) more abundant than last year but will probably run less than one per cent in state.

MISCELLANEOUS NOTES

Potato blackleg (Bacillus phytophthorus) is more prevalent than usual in Michigan. Some fields are reported with as much as 6 per cent. (Kotila, Oct. 15).

Angular leafspot (Bacterium malvacearum) of cotton. This has been more prevalent than usual in South Carolina. Doctor Moore reports it as

abundant and widespread, and other reports of its abundance are on file. No estimate has been made of the damage done. (Ludwig, Oct. 15)

Cabbage yellows (Fusarium conglutinans) has not been reported in Michigan this year. Temperatures have been below normal throughout most of the growing season for this crop. (Nelson, Oct. 15)

Cowpea scab (Cladosporium vignae) in Arkansas has been sent in several times, always on black-eyed peas. It was reported as causing practically complete loss in one case. (V. H. Young, Oct. 1)

Little peach (undet.) occurs to some extent in the peach growing districts of New York. One orchard near Trumansburg, Seneca County, showed a considerable number of affected trees of Rochester and Hill's Chili but not many of Elberta and Stevens Rare Ripe. (Barrus, Sept. 1)

Specimens of pears affected with a rust, determined by Doctor Roberts of the Bureau of Plant Industry as Gymnosporangium nelsoni, were received from W. T. Horne. The specimens were collected by H. E. Brisley, at Clemenceau, Arizona, October 9.

W. A. Archer sent in from Boone County, Missouri, a quince fruit affected with a spot which is, to all appearances, due to Leptothyrium pomi, although the fungus has not been found fruiting. There does not seem to be any reference in literature to the occurrence of this fungus on quince.

On October 1, D. C. George collected Trametes sohini on California pepper trees (Schinus molle) in the State Capitol grounds at Phoenix, Arizona. The determination was verified by Doctor Weir of the Bureau of Plant Industry. According to the collector, "The fungus is especially prominent this season, probably due to heavy rainfall, and sporophores are appearing on the trees from the soil surface on up into the branches."